En

Operating instructions and spare parts list

Powder coating equipment

OptiFlex 2 BN

(Boron Nitride)

WARNING:
This equipment was developed for use with electrically non-conducting powders. The use of electrically conducting powders (like metallic or graphite powders) can cause a permanent decrease of functioning.

Translation of the original operating instructions

Gema

Documentation OptiFlex 2 BN

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Printed in Switzerland

Gema Switzerland GmbH
Mövenstrasse 17
9015 St.Gallen
Switzerland

Phone: +41-71-313 83 00
Fax.: +41-71-313 83 83

E-Mail: info@gema.eu.com
Homepage: www.gemapowdercoating.com

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General safety regulations

This chapter sets out the fundamental safety regulations that must be followed by the user and third parties using OptiFlex 2 BN manual coating equipment.

These safety regulations must be read and understood in full before the OptiFlex 2 BN is put into operation.

Safety symbols (pictograms)

The following warnings with their meanings can be found in the Gema operating instructions. The general safety precautions must also be followed as well as the regulations in the operating instructions.

DANGER!
Danger due to electrically live or moving parts. Possible consequences: death or serious injury

WARNING!
Improper use of the equipment could damage the machine or cause it to malfunction. Possible consequences: minor injuries or damage to equipment

INFORMATION!
Useful tips and other information

General information

The OptiFlex 2 BN manual coating equipment is state of the art equipment that conforms to the recognized technical safety regulations and is designed for normal powder coating applications.

Any other use is considered non-compliant. The manufacturer shall not be liable for damage resulting from such use; the user bears sole responsibility for such actions. Gema Switzerland GmbH must be consulted before OptiFlex 2 BN manual coating equipment is used for any other purposes or substances beyond those indicated here.

Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of conformity of use.

The relevant accident prevention regulations, as well as other generally recognized safety regulations, occupational health and structural regulations are to be observed.

Furthermore, the country-specific safety regulations also must be observed.

Additional safety and operation notices can be found on the accompanying CD or on the homepage www.gemapowdercoating.com.

General dangers

Start-up is forbidden until it has been established that the OptiFlex 2 BN manual coating equipment has been set up and wired according to the EU guidelines for machinery.

Unauthorized modifications to the OptiFlex 2 BN Manual coating equipment exempt the manufacturer from any liability from resulting damages or accidents.

The operator must ensure that all users have received appropriate training for powder spraying equipment and are aware of the possible sources of danger.

Any operating method, which will negatively influence the technical safety of the powder spraying equipment, is to be avoided.

For your own safety, only use accessories and attachments listed in the operating instructions. The use of other parts can lead to risk of injury. Only original Gema spare parts should be used!

Repairs must only be carried out by specialists or by authorized Gema service centers. Unauthorized conversions and modifications can lead to injuries and damage to the equipment and invalidate the Gema Switzerland GmbH guarantee.

Electrical danger

The connecting cables between the control unit and the spray gun must be installed so as to eliminate the possibility of damage during the operation. Please observe the local safety regulations!

The plug connections between the powder spraying equipment and the mains should only be removed when the power supply is switched off.

All maintenance activities must take place when the powder spraying equipment is switched off.

The powder coating equipment may not be switched on until the booth is in operation. If the booth stops, the powder coating device must switch off too.

Explosion hazard

The control units for the spray guns must be installed and used in zone 22. Spray guns are allowed in zone 21.

Only original Gema OEM parts are guaranteed to maintain the explosion protection rating. If damages occur related to the use of spare parts from other manufacturers, all relevant warranty or compensation claims are void!

Conditions leading to dangerous levels of dust concentration in the powder spraying booths or in the powder spraying areas must be avoided. There must be sufficient technical ventilation available, to prevent a dust concentration of greater than 50% of the lower explosion limit (UEG = max. permissible powder/air concentration). If the UEG is not known, then a value of 10 g/m³ should be considered (see EN 50177).

All unauthorized conversions and modifications to the electrostatic spraying equipment are forbidden for safety reasons.

The safety devices may not be dismantled or put out of operation.

Mandatory operational and workplace notices from the operating company must be written in a comprehensible manner in the language of equipment operators and posted in a suitable place.

Slip hazard

Powder lying on the floor around the powder spraying equipment is a potentially dangerous source of slipping. Booths may be entered only in the places designed for this purpose.

Static charges

Static charges can have the following consequences: Charges to people, electric shocks, sparking. Proper grounding must be in place to prevent objects from becoming charged.

Observe the grounding regulations

Grounding

All electrically conductive parts found within 5 meters around each booth opening, and in particularly the objects to be coated, must be grounded. The grounding resistance of each object must amount to maximally 1 MOhm. This resistance must be checked/tested regularly when starting work.

The condition of the work piece attachments, as well as the hangers, must guarantee that the work pieces remain grounded. The appropriate measuring devices must be kept ready in the workplace, in order to check the grounding.

The floor of the coating area must conduct electricity (normal concrete is generally conductive).

The supplied grounding cable (green/yellow) must be connected to the grounding screw of the electrostatic manual powder coating equipment. The grounding cable must have a good metallic connection with the coating booth, the recovery unit and the conveyor chain, respectively with the suspension arrangement of the objects.

Fire and smoke prohibition

Smoking and igniting fire are forbidden in the entire vicinity of the system! No work that could potentially produce sparks is allowed!

The stay for persons with cardiac pacemakers is forbidden

As a general rule for all powder spraying installations, persons with pacemakers should never enter high voltage areas or areas with electromagnetic fields. Persons with pacemakers should not enter areas with powder spraying installations!

Photographing with flashlight is forbidden

Photographing with flashlight can lead to unnecessary releases and/or disconnections by safety devices.

Disconnect from mains before maintenance works take place

Disconnect the plugs before the machines are opened for maintenance or repair.

The plug connections between the powder spraying equipment and the mains should only be removed when the power supply is switched off.

As far as it is necessary, the operating firm must ensure that the operating personnel wear protective clothing (e.g. facemasks).

A dust mask corresponding to filter class FFP2 at minimum must be worn during any cleaning work.

The operating personnel must wear electrically conductive, steel-toe footwear (e.g. leather soles).

The operating personnel should hold the gun with bare hands. If gloves are worn, these must also conduct electricity.

These general safety regulations must be read and understood in all cases prior to start-up!

Conformity of use

1. The OptiFlex 2 BN manual coating equipment is state of the art equipment that conforms to the recognized technical safety regulations and is designed for normal powder coating applications.
2. Any other use is considered non-compliant. The manufacturer shall not be liable for damage resulting from such use; the user bears sole responsibility for such actions. Gema Switzerland GmbH must be consulted before OptiFlex 2 BN manual coating equipment is used for any other purposes or substances beyond those indicated here.
3. Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of conformity of use. The OptiFlex 2 BN manual coating equipment should only be used, maintained and started up by trained personnel informed and familiar with the possible hazards involved.
4. Start-up (i.e. operation of its intended use) is not allowed until it has been established that the OptiFlex 2 BN manual coating equipment has been installed and wired according to the EU Machinery Directive (2006/42/EC). EN 60204-1 (machine safety) must also be observed.
5. Unauthorized modifications to the OptiFlex 2 BN manual coating equipment exempt the manufacturer from any liability from resulting damage.
6. The relevant accident prevention regulations, as well as other generally recognized safety regulations, occupational health and structural regulations are to be observed.
7. Furthermore, the country-specific safety regulations also must be observed.

Product-specific safety measures

- Installation work performed by the customer must be carried out according to local regulations.
- All components must be grounded according to the local regulations before start-up.

OptiFlex 2 BN Manual coating equipment

The OptiFlex 2 BN is a constituent part of the system and is thus integrated into the safety system of the plant.

If it is to be used in a manner outside the scope of the safety concept, then corresponding measures must be taken.

Note:
For further security information, see the more detailed Gema safety regulations!

About this manual

General information

This operating manual contains all important information required to work with the OptiFlex 2 BN manual coating equipment. It will safely guide you through the start-up process and give you references and tips for the optimal use of your new powder coating system.

Information about the functionality of the individual system components - booth, gun control unit, manual gun or powder injector - should be referenced to their enclosed corresponding documents.

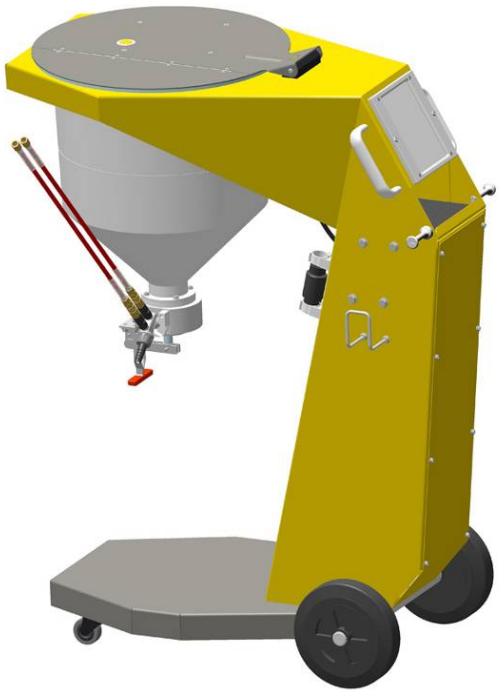
Product description

Field of application

The OptiFlex 2 BN manual coating equipment (with stirrer) is exclusively intended for electrostatic coating using electrically non-conducting powders (For more on this please also review chapter "Technical Data").

Any other use is considered non-compliant. The manufacturer is not responsible for any incorrect use and the risks associated with such actions are assumed by the user alone!

For a better understanding of the interrelationships in powder coating, it is recommended that the operating instructions for all other components be read as well, so as to be familiar with their functions too!



OptiFlex 2 BN Manual coating equipment

Utilization

The OptiFlex BN Electrostatic manual equipment for Boron Nitride with the OptiFlex 2 GM03 Manual powder gun or OptiGun GA02 Automatic powder gun is ideally suited for spraying short bursts of fine grained powder with small powder output volumes.

Reasonably foreseeable misuse

- Operation without the proper training
- The use of electrically conducting powders (like metallic or graphite powders)
- Use with insufficient compressed air quality and grounding
- Use in connection with unauthorized coating devices or components

Technical data

Connectable guns

OptiFlex 2 BN	connectable
OptiFlex 2 GM03	yes
OptiGun GA02	yes (with adaptor)

Warning:
The OptiFlex 2 BN manual coating equipment can only be used with the specified gun types!

Powder output (guide values)

Note:
In order to ensure a perfect operation, the Correction value C0 (minimum powder output at 0% powder output value) must be adjusted (For more on this, please also see the operating instructions for the OptiFlex 2 CG09 manual gun control unit).

General conditions for the OptiFlow Injector

Powder type	Boron Nitride
Powder hose length (**m**)	6
Powder hose Ø (**mm**)	9,5
Power hose type	PUR
Input pressure (**bar**)	5,5
Conveying air nozzle Ø (**mm**)	2,2
Correction value C0	Powder output zeroing adjustment

Air flow rates

The total air consists of conveying air and supplementary air, in relation to the selected powder quantity (in %). As a result the total air volume is maintained constant.

OptiFlex 2 BN	Range	Factory setting
Flow rate - fluidizing air - OptiFlex S (with optional fluid plate)	0-1,0 Nm³/h	0,2 Nm³/h
Electrode rinsing air flow rate	0-3,0 Nm³/h	0,1 Nm³/h
Flow rate total air (at 5.5 bar)	1,8-6,5 Nm³/h	

Note:
The total air consumption for the device is determined based on the 3 configured air values.
These values apply for an internal control pressure of 5.5 bar!

Electrical data

OptiFlex 2 BN	
Nominal input voltage	230-240 VAC (110-120 VAC)
Frequency	50-60 Hz
Connected load	150 VA
Nominal output voltage (to the gun)	eff.10 V
Nominal output current (to the gun)	max. 1.2 A
Temperature range	0 °C - +40 °C (+32 °F - +104 °F)
Max. surface temperature	100 °C (+212 °F)
Approvals	CE Ex II 3 D IP54 100 °C

Pneumatic data

OptiFlex 2 BN	
Max. input pressure	10 bar
Min. input pressure	6 bar
Input pressure (Dynamic based on pressure regulator setting)	5.5 bar / 80 psi
Max. water vapor content of the compressed air	1.3 g/m³
Max. oil vapor content of the compressed air	0.1 mg/m³
Max. compressed air consumption	7 Nm³/h

Dimensions

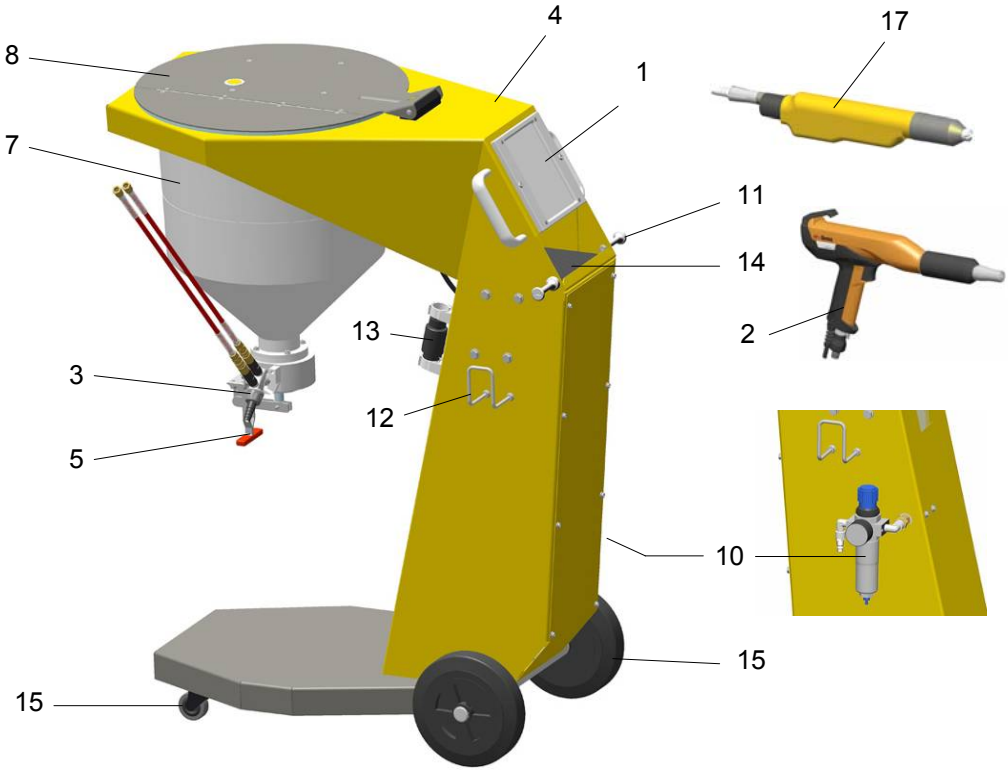
OptiFlex 2 BN	
Width	529 mm
Depth	837 mm
Height	1130 mm
Weight	57 kg

Processible powders

OptiFlex 2 BN	
Plastic powder	yes
Metallic powder	no
Enamel powder	no

Design and function

General view



OptiFlex 2 BN manual coating equipment - Structure

1	OptiFlex 2 CG09 control unit	10	Filter unit
2	OptiFlex 2 GM03 manual powder gun	11	Gun holder
3	OptiFlow injector	12	Hose holder
4	Mobile frame with hand rail	13	Communication adapter
5	Discharge flap	14	Shelf
7	Stirrer hopper	15	Rubber wheel
8	Filler flap	16	Swivel wheel
		17	Automatic gun

OptiFlex 2 CG09 control unit

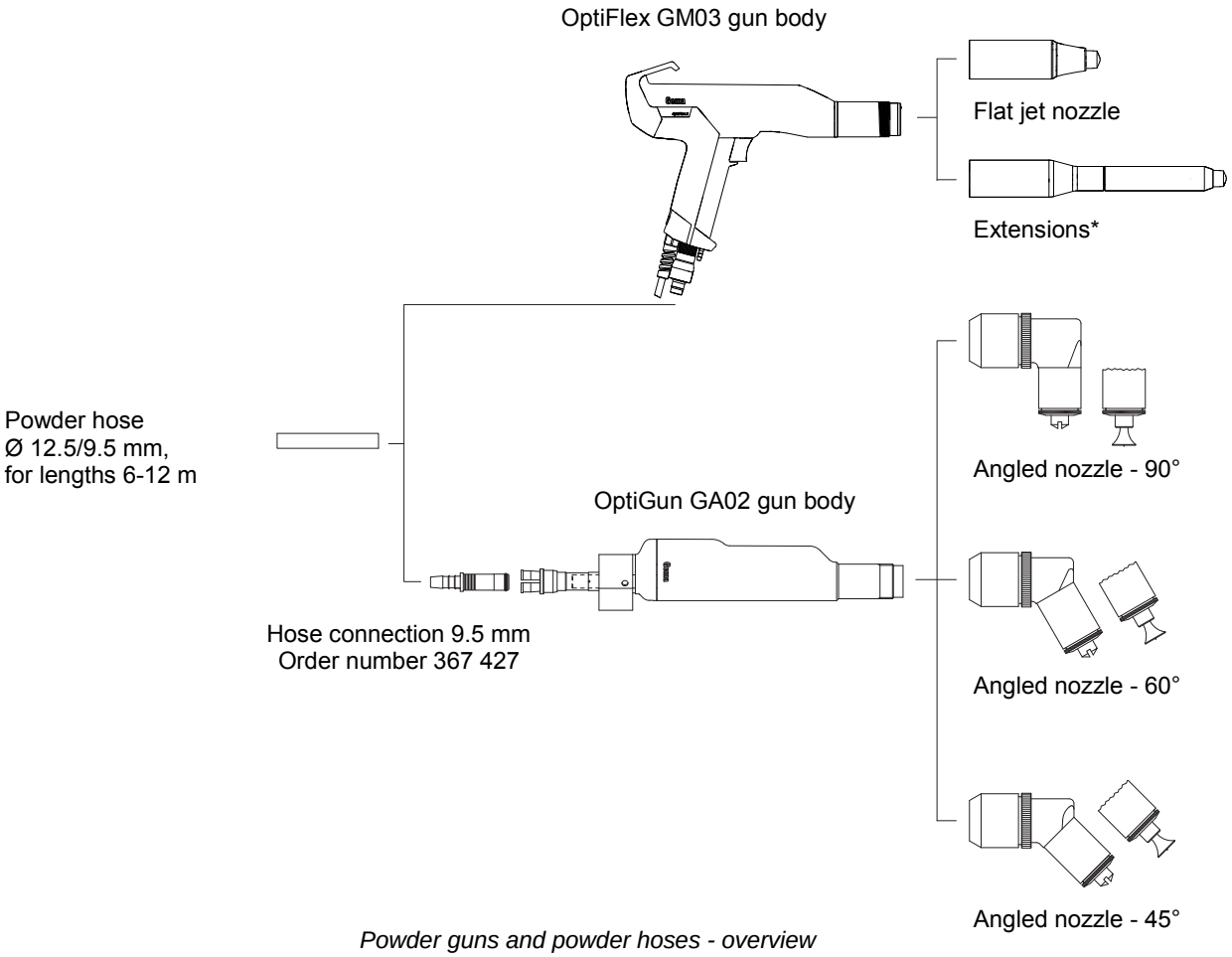
All information about the OptiFlex 2 CG09 manual gun control unit can found in the documentation for that equipment (enclosed with this manual)!

OptiFlow IG06 injector

All information about the OptiFlow injector can be found in the corresponding enclosed documentation!

Powder guns and powder hoses

All information about the OptiFlex 2 GM03 manual powder gun or OptiGun GA02 automatic gun can be found in the documentation for that equipment (enclosed with this manual)!



Powder guns and powder hoses - overview

* 300 and 500 mm extensions, special lengths on request

Scope of delivery

OptiFlex 2 BN

- OptiFlex 2 CG09 control unit in a metal case with power supply cable
- mobile trolley with a gun/hose support
- Powder hopper with stirrer and cover, inclusive mains adaptor for the stirrer
- plug-in OptiFlow injector
- OptiFlex 2 GM03 manual powder gun or OptiGun GA02 automatic gun with gun cable, powder hose, rinsing air hose and standard nozzle set (For more on this, see the gun operating manual)
- Communication adaptor (only for use with an OptiGun GA02 Automatic powder gun (see OptiGun GA02 Automatic powder gun operating manual)
- Pneumatic hoses for conveying air (red), supplementary air (black), fluidizing air (black) and rinsing air (black)
- Operating manual
- Short instructions

Typical properties - Characteristics of the functions

Processing the powder from the stirrer hopper

The OptiFlex 2 BN manual coating equipment allows for powder to be processed out of the stirrer hopper. Because of the conical shape of the stirrer recipient, the powder can be used completely (optimum powder consumption).

Start-up

Preparation for start-up

Basic conditions

When starting up the OptiFlex 2 BN manual coating unit, the following general conditions impacting the coating results must be taken into consideration:

- Manual coating equipment is set up properly
- Gun control unit correctly connected
- Gun correctly connected
- Corresponding power and compressed air supply available
- Powder preparation and powder quality

Set-up

The OptiFlex 2 BN manual coating equipment should always be set up vertically on a flat surface.

WARNING:
The manual coating equipment must not under any circumstances be set up near a heat source (such as an enameling furnace) or an electromagnetic source (such as a control cabinet).
- Permissible ambient air temperature must be observed.

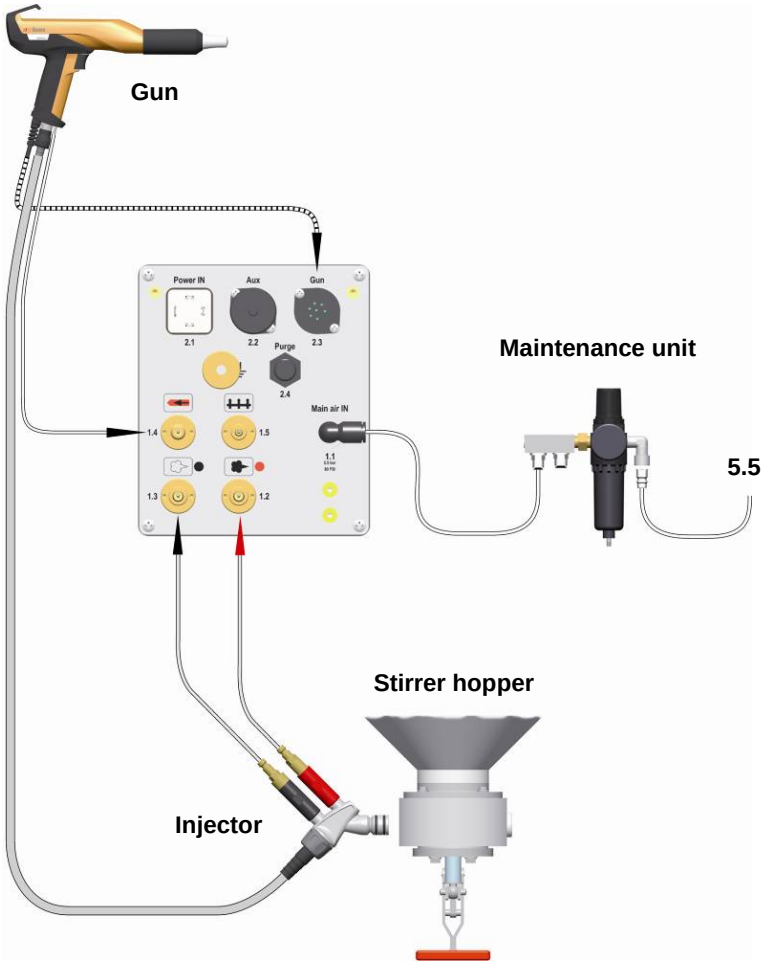
The equipment must be locked in order to prevent the inadvertent rolling.

Mounting instructions

The OptiFlex 2 BN manual coating equipment must be set up in accordance with the setup and connecting instructions (included with delivery).

OptiFlex 2 BN Manual coating equipment

Connection instructions



Connection instructions - overview

The OptiFlex 2 BN manual coating equipment must be connected in accordance with the setup and connection instructions (Please also review the operating instructions for the OptiFlex 2 CG09 manual gun control unit).

1.

2.

Note:
Use clamp to connect grounding cable to the cabin or the suspension arrangement. Check ground connections with Ohm meter and ensure 1 MOhm or less!

3.

4.

5.

6.

7.

8.

9.

10.

Note:
The compressed air must be free of oil and water!

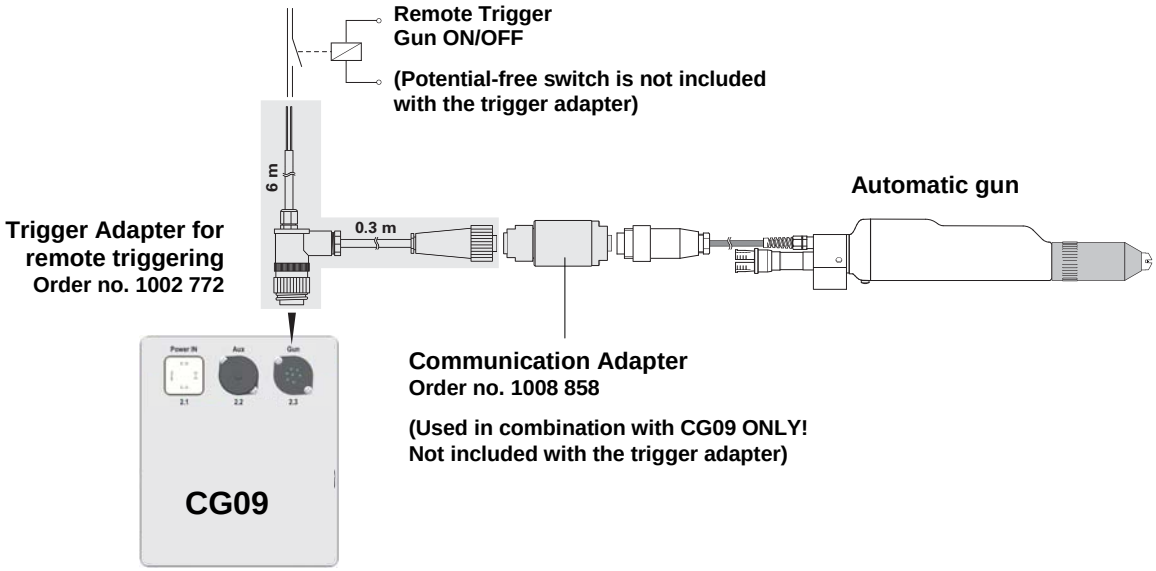
Note:
The powder hose Ø 12.5/9.5 mm (PUR) is to be used for hose lengths up to 12 m. For lengths beyond that, please contact Gema.

Remote trigger adapter for powder guns (Boron Nitride Adapter)

An OptiGun GA02 Automatic powder gun can be connected to a Gun control unit and externally triggered by short-circuiting the two cables of the adaptor piece).

The adaptor must be switched between the powder gun and the Gun Control unit.

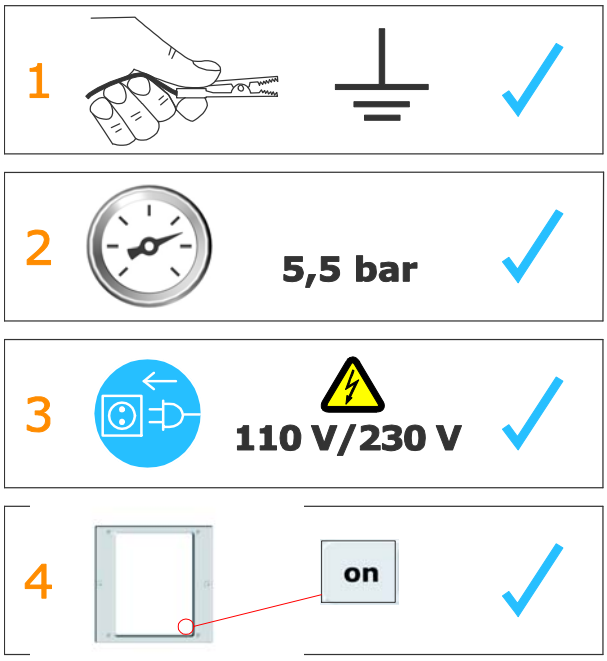
The two wire cable can be connected to a relay output of a PLC, which short-circuits both.



Remote triggering - Connecting guide

Initial start-up

Note:
If a malfunction occurs, see the troubleshooting guide, as well as the gun control unit operating manual!



Note:
The remainder of the start-up procedure for the OptiFlex 2 GM03 manual powder gun is explicitly described in the operating instructions for the OptiFlex 2 CG09 manual powder gun control unit (chapter "Initial start-up" and "Daily start-up")!

Setting the device type

Note:
If the control unit is delivered as a integral component of an OptiFlex apparatus, then the system parameter P0 will have been factory preconfigured to the value "2" for optimal use (For more on this, please also see the operating instructions for the OptiFlex 2 CG09 manual gun control unit)!

NOTE!
The manual gun control unit always starts up to the last configured settings.

Operation

Coating

WARNING:
If the manual equipment is not being used for coating in conjunction with a sufficiently powerful suction unit, then the stirred-up dust from the coating powder can cause respiratory issues or cause a slippage/falling hazard.

- **The manual equipment may only be operated in conjunction with a sufficiently powerful suction unit (such as Gema Classic Open booth).**

1. Turn on the gun control unit with the **ON** key
   The displays illuminate and the control unit is ready for operation
2. Fill the stirrer hopper with powder
   a) Open the hinged flap of the stirrer hopper cover

WARNING:
If the cover to the agitator unit is opened, then this can fall shut again during inattentive handling. Fingers or hands in the cover/container zone can be crushed.

NOTE!
Check whether the discharge flap is closed and not just ajar.

   b) Fill in the coating powder in the stirrer recipient. Maximum filling level of the powder is marked on the inside of the recipient (useful capacity approx. 18,5 dm³)
   c) Close the hinged flap of the stirrer recipient cover
   d) The stirrer can be put into operation by pressing manually the button on the cover when filling/emptying
3. Set coating parameters:
4. Press the application button for the preset mode:

flat parts	

The arrow above the desired button lights up

OR

5. Press program key
   a) Select desired program (01-20)

b) Change coating parameters as required

Note:
Programs 01-20 are preset at the factory but can be modified at any time, after which they are automatically stored.

Description	Presetting
Powder output	50%
Total air	4,0 Nm³/h
High voltage kV	80 kV
Spray current µA	80 µA
Electrode rinsing air	0,1 Nm³/h
Fluidizig air (if available)	0,1 Nm³/h

6. Setting the total air volume

Note:
A total air volume of 4 Nm³/h and a 50% powder share are recommended as the base values.

7. Adjust the powder output volume (e.g. according to the desired coating thickness)

or

Note:
To achieve maximum efficiency, we recommend avoided an overly high powder volume where possible! The standard setting of 50% and a total air volume of 4 Nm³/h is recommended at the start. The total air volume is thereby kept constant automatically by the control unit.

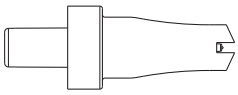
If values are entered that the equipment cannot implement, then the operator is informed of this by a blinking in the relevant display and a temporary error message!

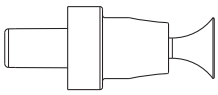
8. Setting the electrode rinsing air

   a) Press the key

   The second display level will be shown

   b)


0,1-0,3 Nm³/h


0,5 - 1,0 Nm³/h

9. Point the gun into the exhaust air unit (not at the object to be coated), press the gun trigger and visually check the powder output

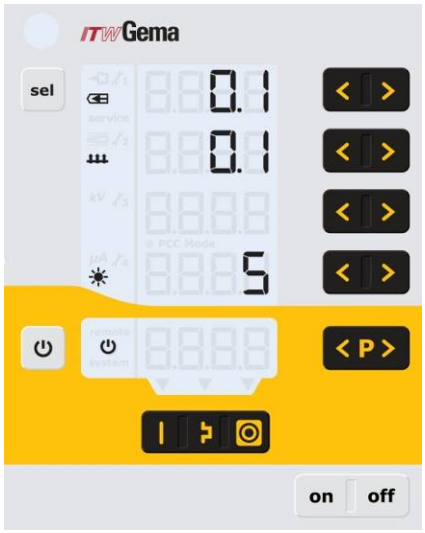
Note:
The stirrer starts by pressing the gun trigger. By letting loose the gun trigger, the stirrer runs after for approx. 15-20 seconds. So open the cover only after the stirrer has stopped! By lifting up the stirrer cover, the engine switches off.

10. Check whether everything is functioning correctly
11. Coating
12. Adjust the coating parameters as necessary

Setting the background illumination

1. Press

key
The display switches to the following level:



2.
Select the desired brightness

Shutdown

1. Release gun trigger
2. Switch off the control unit

Note:
The adjustments for high voltage, powder output volume and electrode rinsing air remain stored!

If in disuse for several days

1. Separate from power mains
2. Empty the stirrer hopper, clean the coating equipment (see the corresponding operating manual)
3. Turn off the compressed air main supply

Cleaning and maintenance

Note:
Regular and conscientious maintenance increases the service life of the OptiFlex 2 BN manual coating equipment and provides for a longer continuous coating quality!
The parts, which are to be replaced during maintenance work, are available as spare parts. These parts will be found in the corresponding spare parts list!

Daily maintenance

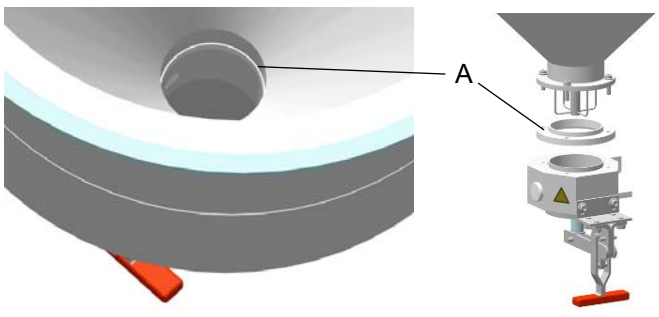
1. Clean the injector (see therefore the user manual of the OptiFlow injector)
2. Clean the powder gun (see therefore the user manual of the corresponding powder gun)
3. Clean the powder hose; please also review the section "Color change"

Weekly maintenance

1. Clean the stirrer hopper, injector and powder gun.
2. Check the control unit grounding connections to the suspension devices of the work pieces

Biannually maintenance

1. Check the guide ring (A) for wear, and, if necessary, replace it, otherwise the stirrer hopper can be dammaged



If in disuse for several days

1. Separate from power mains
2. Empty the stirrer hopper, clean the coating equipment
3. Turn off the compressed air main supply

Powder hose rinsing

If longer downtimes take place, the powder hose has to be cleaned.

Procedure:

1. Disconnect the powder hose from the hose connection on the injector
2. Point the gun into the exhaust air unit
3. Blow through the hose manually with a compressed air gun
4. Connect the powder hose again to the hose connection on the injector

Cleaning

If no dust mask or one of an insufficient filter class is worn when cleaning the manual equipment, then the dust that is stirred up from the coating powder can cause respiratory problems.

- **The ventilation system must be turned on for all cleaning work.**
- **A dust mask corresponding to filter class FFP2 at minimum must be worn during any cleaning work.**

Cleaning the powder container

1. Place an empty container under the discharge flap. Open the discharge flap by pushing the lever towards the column.

WARNING:
When opening/closing the discharge flap, fingers caught between the flap/injector bracket and lever can be severely crushed!

2. Press the Push button on the powder hopper cover and continue to hold it down. The powder then empties into the container.
3. Remove the injector, and the plug covering the second injector hole
4. Clean the injector and the injector connection

WARNING:
Danger of accident!
Never put fingers or any other objects into the injector seat hole(s) at the bottom of the powder hopper when the stirrer is operating!

5. Remove the cover (take care not to damage the stirrer arm)

6. Wipe the hopper, cover and stirrer arm with a clean, dry brush, and a clean cloth
7. Carefully close the cover again (taking care of the stirrer arm), and fit the injector, and hoses. The coating equipment is now ready for operation.

Gun cleaning

Frequent cleaning of the gun helps to guarantee the coating quality.

Note:
Before cleaning the powder gun, switch off the control unit. The compressed air used for cleaning must be free of oil and water!

Daily:

1. Blow off the outside of the gun and wipe, clean etc.

Weekly:

2. Remove the powder hose from the connection
3. Remove the spray nozzle from the gun and clean it
4. Blow out the gun from the connection in flow direction with compressed air
5. Clean the integrated gun tube with the provided gun brush
6. Blow through the gun with compressed air again
7. Clean the powder hose
8. Reassemble the gun and connect it

Note:
Please also review the corresponding gun user manual!

Maintenance and cleaning of the filter unit

The filter unit on the OptiFlex 2 BN manual coating equipment measures and cleans the compressed air. This is where the equipment's main compressed air connection is located.

Replacing the filter element

Procedure:

1. Unscrew the filter glass on the filter unit
2. Remove the complete filter element

3. Replace the filter element
4. Clean the filter glass on the inside and install it again

Troubleshooting

General information

Note:
Prior to any troubleshooting measures, always check whether the equipment parameters (P0) as configured in the control unit are correct (See operating instructions for the OptiFlex 2 CG09 manual gun control unit, Chapter "Initial Start-up – Setting Equipment Type")

Fault	Causes	Troubleshooting
Control unit displays remain dark, although the control unit is switched on	Control unit is not connected to the mains	Connect the equipment with the mains cable
	Power pack fuse defective	Replace the fuse
	Power pack defective	Contact local Gema representative
The gun does not spray powder, although the control unit is switched on and the gun trigger is pressed	Compressed air not present	Connect the equipment to the compressed air
	Injector, throttle motor or nozzle on injector, powder hose or powder gun are clogged	Clean the corresponding part
	Insert sleeve in the injector is clogged	Replace
	Insert sleeve is not installed	Mount insert sleeve
	Fluidization not running	see below
	Total air incorrectly configured	Set total air correctly (Default value 4 Nm³/h)
	Main valve defective	Replace main valve
Gun LED remains dark, although the gun is triggered	Gun not connected	Connect the gun
	Gun plug, gun cable or gun cable connection defective	Contact local Gema representative
	Remote control on powder gun defective	Contact local Gema representative

Fault	Causes	Troubleshooting
Powder does not adhere to object, although the gun is triggered and sprays powder	The objects are improperly or insufficiently grounded	Check grounding, reground at better quality
	High voltage and current deactivated	Press the selection key (application key)
	High voltage cascade defective	Contact local Gema representative
No electrode rinsing air	Rinsing air throttle motor defective	Contact local Gema representative
Stirrer motor not functioning	Motor/condenser broken	Contact local Gema representative
	Motor cable not plugged in	plug in
	Incorrect equipment type configured	Configure parameter P0 (See operating instructions for the OptiFlex 2 CG09 manual gun control unit, Chapter "Initial Start-up – Setting Equipment Type")

Spare parts list

Ordering spare parts

When ordering spare parts for powder coating equipment, please indicate the following specifications:

- Type and serial number of your powder coating equipment
- Order number, quantity and description *of* each spare part

Example:

- **Type** OptiFlex 2 BN
  Serial number 1234 5678
- Order no. 203 386, 1 piece, Clamp - Ø 18/15 mm

When ordering cable or hose material, the required length must also be given. The spare part numbers of this bulk stock is always marked with an *****.

Wearing parts are always marked with a #.

All dimensions of plastic hoses are specified with the external and internal diameter:

Example:

Ø 8/6 mm, 8 mm outside diameter (o/d) / 6 mm inside diameter (i/d)

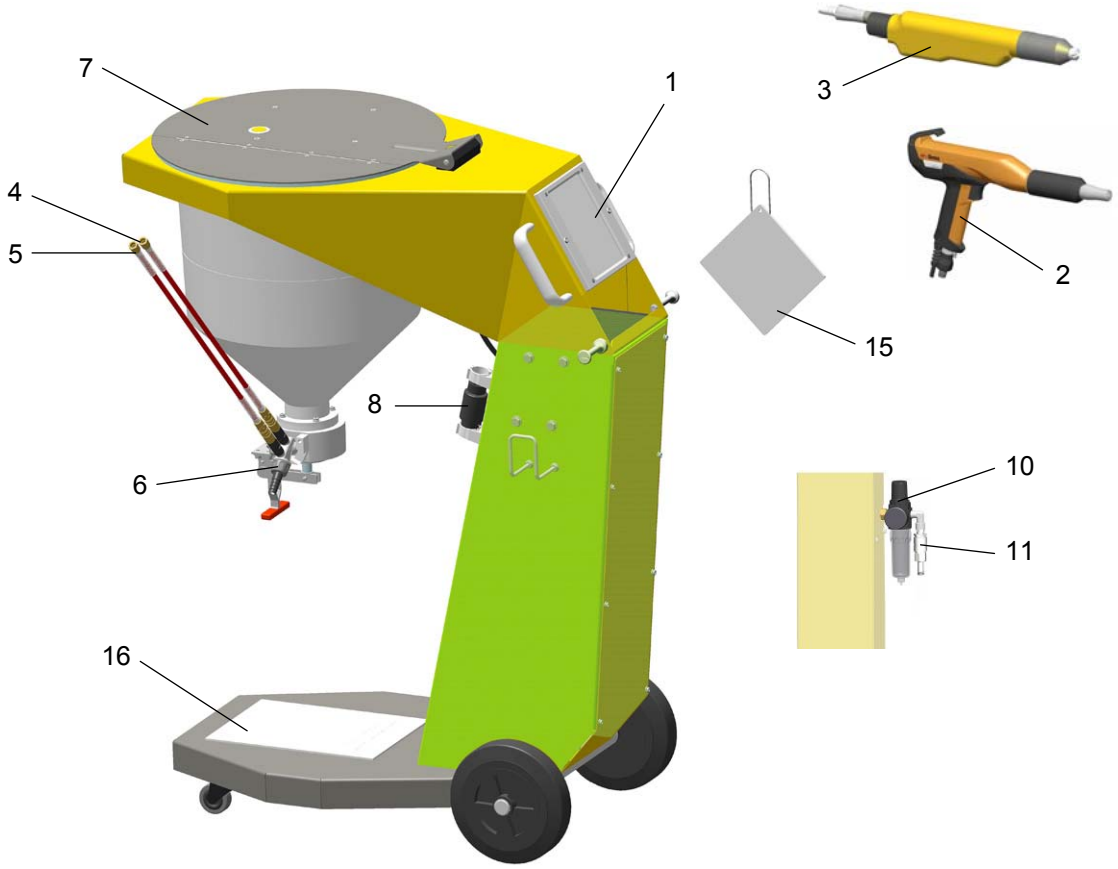
WARNING!
Only original Gema spare parts should be used, because the explosion protection will also be preserved that way. The use of spare parts from other manufacturers will invalidate the Gema guarantee conditions!

OptiFlex 2 BN manual coating equipment – Spare parts

1	CG09 gun control unit - complete (see corresponding operating manual)	1007 018
2	GM03 manual powder gun - complete (see corresponding user manual)	1008 070
3	GA02 automatic powder gun - complete (see corresponding user manual)	
4	Pneumatic connection for conveying air - complete (incl. Pos. 4.1, 4.2, 4.3)	
4.1	Quick release connection - NW5, Ø 8 mm, red	261 645
4.2	Nut with kink protection – M12x1 mm, Ø 8 mm	201 316
4.3	Plastic tube - Ø 8/6 mm, red	103 500*
5	Pneumatic connection for supplementary air - complete (incl. Pos. 5.1, 5.2 and 5.3)	
5.1	Quick release connection - NW5, Ø 8 mm, black	261 637
5.2	Nut with kink protection – M12x1 mm, Ø 8 mm	201 316
5.3	Plastic tube - Ø 8/6 mm, black	1008 038*
6	IG06 injector - complete (see corresponding user manual)	1007 780
7	Stirrer hopper - complete (see corresponding spare parts list)	
8	Communication Adapter	1008 858
10	Pneumatic group - complete (see corresponding spare parts list)	
11	Quick release connection - NW7,8-Ø 10- Ø 26 mm	239 267
14	Powder hose - Ø 12.5/9.5 mm (not shown)	103 705*
15	Short instructions	1007 143
16	Operating manual	1008 262

***** Please indicate length

OptiFlex 2 BN manual coating equipment – Spare parts

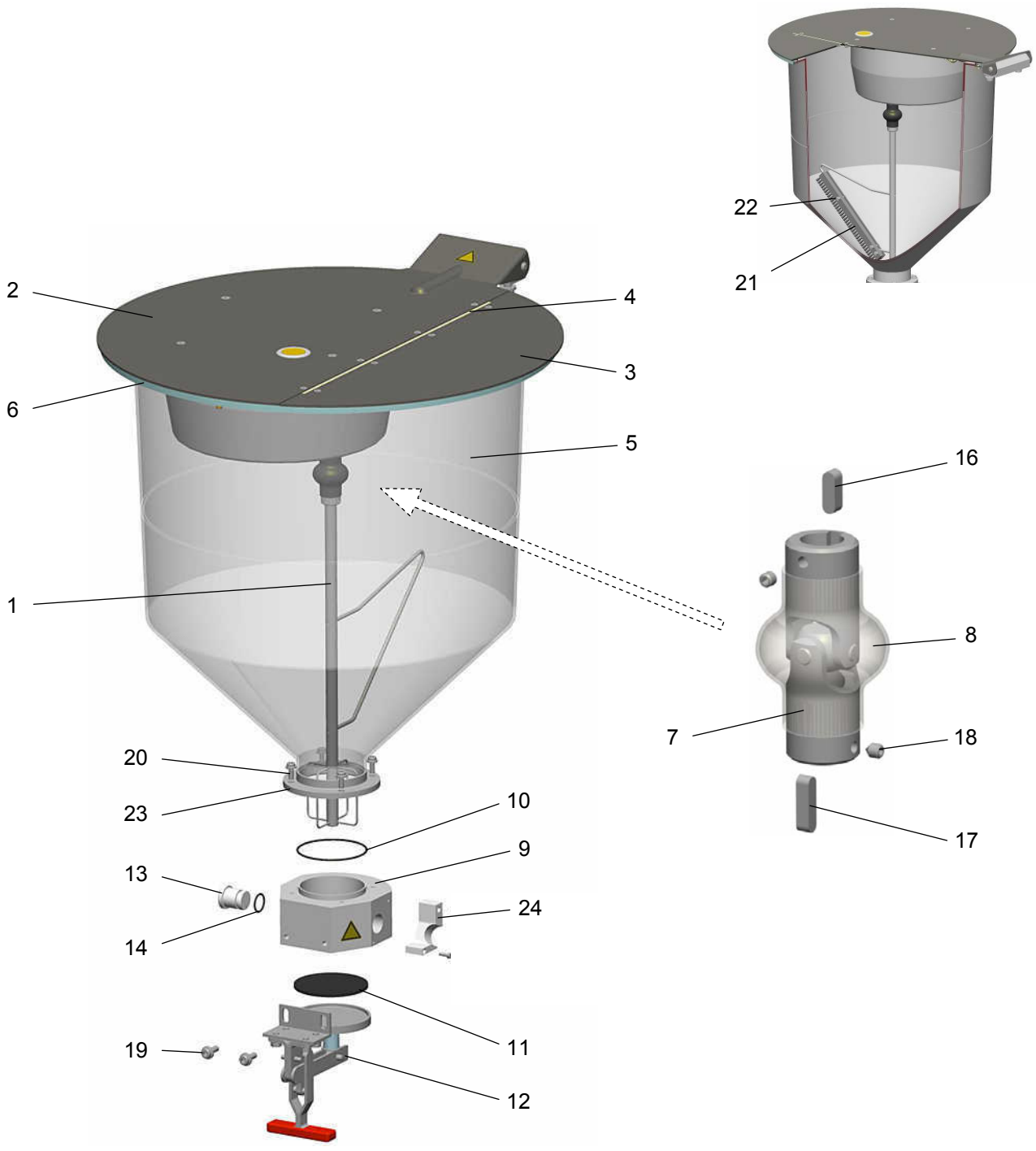


OptiFlex 2 BN manual coating equipment – Spare parts

OptiFlex 2 BN - Stirrer hopper

1	Mini stirrer brush	366 862
2	Main filler cover	1001 730
3	Filler flap	1001 731
4	Hinge	305 472
5	Powder hopper	366 854
6	Gasket for powder container	101 630*
7	Cardan joint - Ø 12 mm, H7	206 369
8	Protective sleeve for cardan joint	206 350
9	Manifold	379 395
10	O-ring - Ø 67.2 mm	236 403
11	Gasket for discharge flap	303 240
12	Discharge flap with toggle clamp, incl. pos. 11	303 194
13	Blind grommet - complete, incl. pos. 14	380 296
14	O-ring for blind grommet	231 517#
16	Feather key - 4x4x12 mm, round	269 263
17	Feather key for cardan joint - 4x4x16 mm, round	206 075
18	Allen grub screw for cardan joint - sharp, M4x5 mm	214 728
19	Cylinder ribbed Allen screw - M6x16 mm	261 823
20	Cylinder ribbed Allen screw - M5x12 mm	257 052
21	Stirrer brush	377 660#
22	Cap screw - M4x12 mm	216 798
23	Guide ring	380 318#
24	Injector holder	380 288

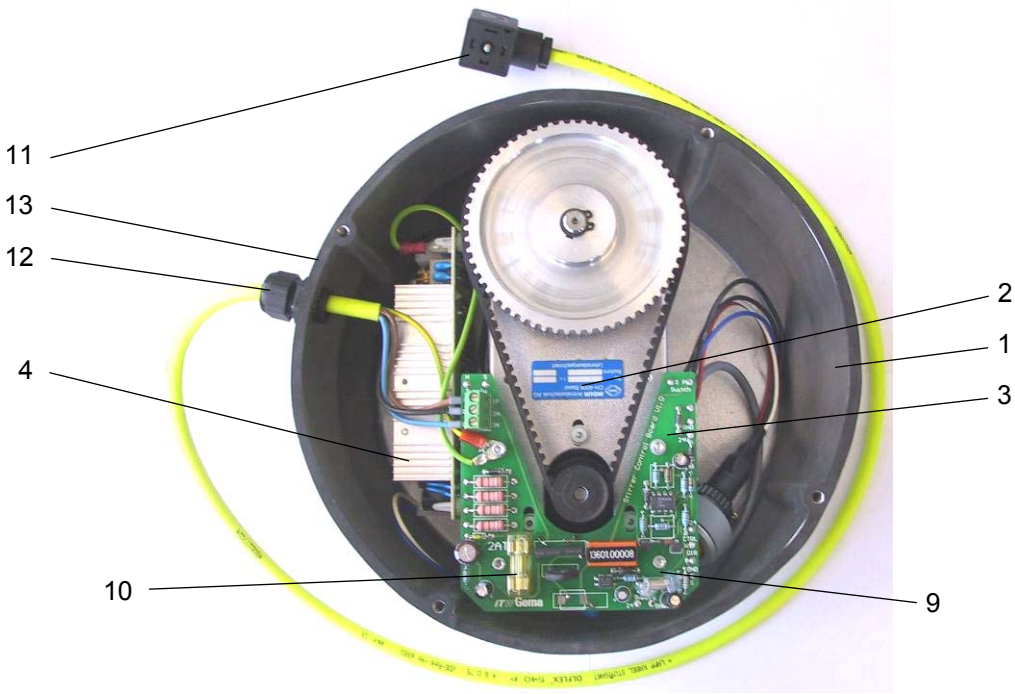
OptiFlex 2 BN - Stirrer hopper

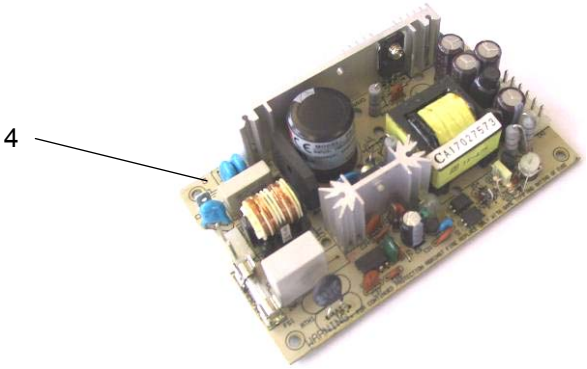


OptiFlex 2 BN - Stirrer drive unit

	Stirrer drive unit - complete (pos. 1-13)	393 940
1	Stirrer motor (with gear and stirrer case)	393 932
2	Stirrer motor (with pinion)	268 950
	Stirrer motor	269 255
	Drive belt	268 941
3	Electronic board for stirrer control - complete, incl. pos. 5	388 173
4	Electronic board for power pack (Stirrer Control Power Supply)	389 277
5	Mains push button - complete, with cable	390 542
	Cable set, consisting of:	
6	Power pack connecting cable	390 550
7	Connecting cable 24 VDC	390 569
8	Grounding wire	391 867
9	Fixture set for power pack board, consisting of two pieces each:	
	Spacer - M3, SW5.5x12 mm	267 775
	Spacer - M3, SW5.5x10 mm	267 007
	Cylinder screw	245 321
	Shake proof washer	205 885
10	Fuse - 2 AT	221 872
11	Adaptor cable for stirrer connection	391 905
12	Gland	265 780
13	Gasket for stirrer motor	393 924

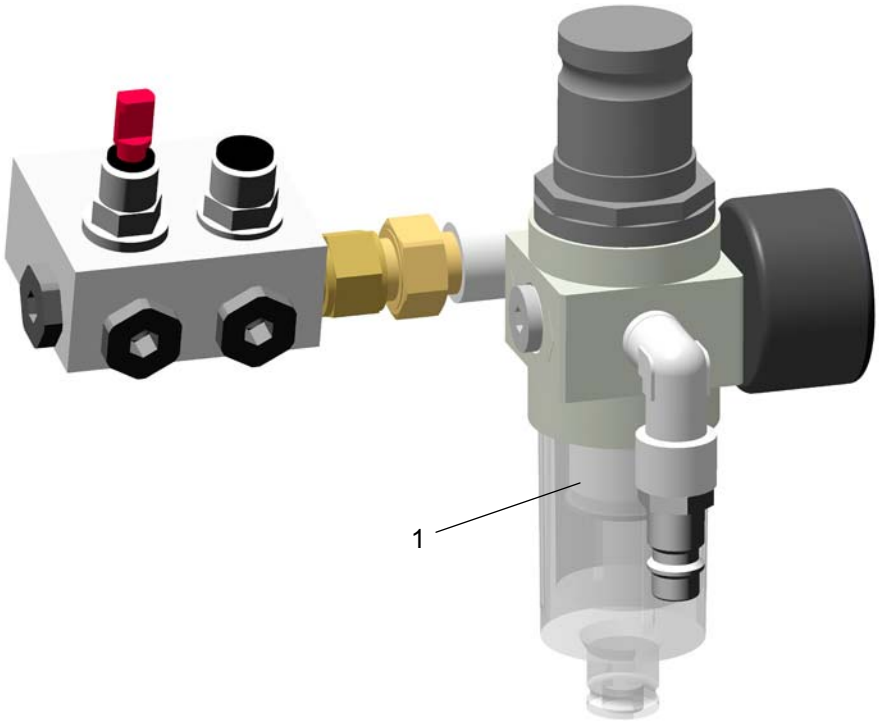
OptiFlex 2 BN - Stirrer drive unit





OptiFlex 2 BN - Pneumatic group

	Pneumatic group - complete	1008 856
1	Filter cartridge - 20 µm	1008 239



OptiFlex 2 BN - Pneumatic group